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## REMARKS

Claims 1-32 are pending in the present Application. The Claims have been presented here for the convenience of the Examiner. No amendments have been made. Reconsideration and allowance of the claims are respectfully requested in view of the following remarks.

Paragraph [0050] has been amended to update copending application information.

### Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1 and 4-6 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Rosato's Injection Molding Handbook (3<sup>rd</sup> ed.) (hereinafter 'Rosato'). The Examiner alleged that Rosato shows that it is known to carry out a method of molding an article, comprising injection molding a polymeric material at a melt temperature of about 330 to 370°C (Table 4-8), into a mold having a mold temperature of about 90 to about 130°C (Table 4-8) and a clamp tonnage of about 12 to about 25 tons to form the article (Page 77-78). Applicants respectfully traverse this rejection.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

Regarding Claim 1 of the instant application, Rosato does not disclose each and every element arranged as in the claim. Table 4-8 of Rosato generally discloses average melt temperatures and the corresponding mold temperatures for several thermoplastic materials. The highest melt temperature disclosed in this table is 334°C for PEEK thermoplastic and the corresponding mold temperature for this thermoplastic is 160°C for unreinforced and 180°C for glass-fiber-reinforced material. The next highest melt temperature disclosed is 330°C for LCP thermoplastic and the corresponding mold temperature is 175°C for unreinforced and 180°C for glass-fiber-reinforced material. As this table itself indicates, particular combinations of specific melt temperature and mold temperature depend on the type of thermoplastic being molded and

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the desired properties of the molded plastic. In other words, melt temperatures and mold temperatures are not randomly combinable to produce molded thermoplastics with desired properties. Furthermore, a particular combination may only apply to certain thermoplastics but not to others. This table does not disclose the particular combination of melt temperature of about 330°C to about 370°C and mold temperature of about 90°C to about 130°C as claimed in Claim 1 of the instant application. Moreover, it does not disclose any corresponding clamp tonnage.

Although Table 2-3 on Page 77-78 generally discloses a variety of clamp tonnage ranges corresponding to the type of instrument, the manufacture of the instrument, and the type of clamp being used, it does not disclose which clamp tonnage to use for a particular thermoplastic. Moreover, the clamp tonnage range disclosed in this table covers a very broad range from 0 to at least 7,000 tons. Furthermore, it does not disclose any melt temperature and/or mold temperature that is recommended to be used with a particular clamp tonnage. In short, neither Table 2-3, Table 4-8, nor the combination of the two discloses the particular combination of the melt temperature of about 330°C to about 370°C, the mold temperature of about 90°C to about 130°C, and the clamp tonnage of about 12 to about 35 tons for injection molding a polymeric material to form a disk as claimed in Claim 1 of the instant application.

Specifically, the claimed melt temperature of about 330°C to about 370°C is generally higher than the highest melt temperature of 334°C disclosed in Table 4-8. More importantly, the corresponding mold temperature of about 90°C to about 130°C in Claim 1 is much lower than the corresponding mold temperature of 160°C to 180°C in Table 4-8. Furthermore, the combination of Table 2-3 and Table 4-8 does not disclose the particular clamp tonnage of 12 to about 35 tons as required by Claim 1. Since Rosato fails to disclose each and every limitation as arranged in Claim 1, Applicants respectfully request withdrawal of the 35 U.S.C. §102(b) rejection of Claim 1. Since Claim 1 is not anticipated by Rosato as presented above, Claims 4, 5, and 6 which all depend from Claim 1 are therefore also not anticipated by Rosato. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §102(b) rejections of Claims 4, 5, and 6.

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Claim Rejections Under 35 U.S.C. § 103(a)

Claims 2, 3, 15, 16, 18-21, 24, 31, and 32 stand rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato in view of Toshihiko et al. (JP 10-306268) (hereinafter "Toshihiko"). Applicants respectfully traverse this rejection.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; and that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Rosato was discussed previously. Toshihiko generally discloses a method of producing an information record medium such as by injection molding. It is noted that since an English translation of this Japanese language application was not supplied by the Examiner, a machine translated version from the JPO website was used for this Response. Toshihiko does not disclose any melt temperature, mold temperature, or clamp tonnage for molding polymeric material.

The Applicants respectfully argue that Claims 2, 3, 15, or 16 have not been rendered obvious over Rosato or Toshihiko, either taken alone or combined, as the references fail to teach or suggest all of the limitations of the claims. Claims 2, 3, 15, and 16 all ultimately depend from independent Claim 1. As presented above, Table 2-3 and Table 4-8 of Rosato fail to teach or suggest the unique combination of the particular melt temperature, mold temperature, and clamp tonnage that is required in Claim 1. Toshihiko does not teach or suggest the particular combination, nor does it provide the missing teaching absent from Rosato. Specifically, Toshihiko fails to disclose any melt temperature, mold temperature, and clamp tonnage at all.

Secondly, Rosato and Toshihiko also fail to contain a motivation or suggestion for a skilled artisan to modify the disclosed molding parameters of the references to result in the particular combination as required by Claim 1 and the dependent Claims 2, 3, 15, and 16. Again, Toshihiko does not teach or suggest any molding conditions. Rosato only provides a general teaching available in the art and does not provide a motivation to use the particular combination

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of parameters as required in Claim 1. Table 4-8 merely lists different combinations of melt temperatures and mold temperatures for a list of thermoplastic materials. There is no suggestion to use a particular melt and mold temperature combination.

Moreover, both Table 2-3 and Table 4-8 of Rosato fail to disclose or suggest which clamp tonnage to use with a particular combination of the melt temperature and the mold temperature. Given the very broad range of clamp tonnage disclosed in Table 2-3 (0 to 7,000 tons) and the lack of disclosed guidance of how to choose the right clamp tonnage with the right melt and mold temperatures, a skilled artisan would not be motivated to modify the teachings of Rosato to result in a particular clamp tonnage of about 12 to about 25 tons with a melt temperature of about 330°C to about 370°C and a mold temperature of about 90°C to about 130°C as is required by Claim 1 in order to mold disks with particular desirable properties. As there is no suggestion or motivation for one of ordinary skill in the art to modify the two references to result in the method of Claim 1, dependent Claims 2, 3, 15, and 16, which all ultimately depend from Claim 1, have not been rendered obvious.

The Applicants respectfully argue that Claims 18-21, 24, 31, and 32 have not been rendered obvious over Rosato or Toshihiko, either taken alone or combined, as the references fail to teach or suggest all of the limitations of the claims. Claim 18 is directed to a multi-step method of molding disks including injection molding a polymeric material to form disks according to a molding model, testing disk assemblies for radial tilt change, creating an updated molding model, and repeating the molding, testing and creating steps to form final disks and a final molding model. Claims 19-21, 24, 31, and 32 all depend from Claim 18.

Toshihiko generally discloses a method of producing an information record medium such as by injection molding. No multi-step method is disclosed to ensure the production of disks of low radial tilt. For example, Toshihiko fails to teach or suggest creating an updated molding model based on molding parameter values. Toshihiko does not disclose molding parameters, such as melt temperature, mold temperature, etc. at all. Toshihiko is generally directed to an adhesive composition used in recording media.

In addition, Rosato also fails to teach or suggest the particular combination of steps

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required by independent Claim 18. Rosato only generally discloses molding parameters. It does not provide the requisite teaching or suggestion to injection mold according to a molding model comprising certain parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters. As each and every claim limitation of independent Claim 18 has not been taught or suggested by Rosato or Toshihiko, either alone or combined, Claim 18 has not been rendered obvious. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections againsts Claim 18 and its dependent Claims 19-21, 24, 31 and 32.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato in view of Dhar et al. (U.S. Patent 6,221,536) (hereinafter "Dhar"). Applicants respectfully traverse this rejection.

Both Claims 7 and 8 depend from Claim 1 and further define the disk as having a certain percent feature replication. As mentioned in the Specification of the present application at paragraph [0017], the percent feature replication is based on a comparison of the measurements of the mold stamper features with the measurements of the matching features of the disk that is molded.

Dhar generally discloses a material containing a polymerizable monomer or oligomer, where the material exhibits shrinkage compensation upon polymerization. The material is used to make recording media.

As discussed above, Claim 1 is not obvious over Rosato as Rosato fails to teach or suggest all the limitations of Claim 1; and, furthermore, fails to motivate a skilled artisan to modify the teachings therein to result in the particular combination of the melt temperature, the mold temperature and the clamp tonnage as required in Claim 1. Dhar also fails to provide the missing teaching, suggestion, or motivation as Dhar does not even disclose molding disks let alone molding disks using particular molding parameters. Since Dhar in combination with Rosato fail to teach or suggest all the limitations of Claim 1 and fails to motivate a skilled artisan to modify

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the teachings therein to result in the particular combination of the melt temperature, the mold temperature and the clamp tonnage as required in Claim 1, Claim 1 and its dependent Claims 7 and 8 have not been rendered obvious over Rosato in view of Dhar. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claims 7 and 8.

Claims 9 and 10 stand rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato in view of Singh et al. (U.S. Patent 6,407,200) (hereinafter "Singh"). Applicants respectfully traverse this rejection.

Singh generally discloses a method of preparing a poly(arylene ether). It does not teach the combination of a poly(arylene ether) and poly(alkenyl aromatic). It does not disclose any melt temperature, mold temperature, or clamp tonnage.

Both Claims 9 and 10 depend from independent Claim 1. As presented above, Claim 1 is not obvious over Rosato. Furthermore, the combination of Rosato and Singh also does not render Claim 1 obvious as the combination fails to teach or suggest each and every limitation of Claim 1 and fails to provide the required motivation to modify their teachings. Particularly, Singh does not teach molding parameters to mold the poly(arylene ether).

Furthermore, both Claims 9 and 10 are directed to the combination of a poly(arylene ether) and poly(alkenyl aromatic). Singh only teaches a poly(arylene ether), not the combination. Accordingly, the Applicants respectfully request removal of the rejections over Claims 9 and 10.

Claim 11 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato and Singh, further in view of Fortuyn et al. (U.S. Patent 6,306,953) (hereinafter "Fortuyn"). Applicants respectfully traverse this rejection.

Fortuyn is generally directed to reduced emissions of styrene and butanal by thermoplastic compositions comprising poly(arylene ether), a polystyrene resin, optionally rubber, and an activated carbon derived from vegetable matter. Fortuyn does not teach disks or molding clamp tonnage.

Claim 11 ultimately depends from Claim 1. As presented above, Claim 1 is not obvious over Rosato in view Singh. Fortuyn also fails to provide the missing teaching or suggestion of the

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particular molding parameters as required by Claim 1. Accordingly as the combination of Rosato, Singh, and Fortuyn fail to teach or suggest all of the limitations required by Claim 1, dependent Claim 11 has not been rendered obvious. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 11.

Claim 12 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato and Singh, further in view of Allen et al. (U.S. Patent 4,727,093) (hereinafter "Allen"). Applicants respectfully traverse this rejection.

Allen generally discloses low density particles or beads of polyphenylene ether or polyphenylene ether-polystyrene blends provided by incorporation of a suitable blowing agent such as pentane into the resin mixture, flowed by expansion of the resin particles by exposure temperatures near the Tg of the blend. Allen does not teach disks or molding clamp tonnage.

Claim 12 ultimately depends from Claim 1. As presented above, Claim 1 is not obvious over Rosato in view Singh. Allen also fails to provide the missing teaching or suggestion of the particular molding parameters as required by Claim 1. Accordingly as the combination of Rosato, Singh, and Allen fail to teach or suggest all of the limitations required by Claim 1, dependent Claim 12 has not been rendered obvious. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 12.

Claim 13 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato and Singh, further in view of Cheung et al. (U.S. Patent 5,872,201) (hereinafter "Cheung"). Applicants respectfully traverse this rejection.

Cheung generally discloses substantially random interpolymers comprising (1) ethylene, (2) one or more aromatic vinylidene monomers or hindered aliphatic or cycloaliphatic vinylidene monomers, and (3) one or more olefinic monomers having from 3 to about 20 carbon atoms. Cheung does not disclose disks or specific injection molding parameters.

Claim 13 ultimately depends from Claim 1. As presented above, Claim 1 is not obvious over Rosato in view Singh. Cheung also fails to provide the missing teaching or suggestion of the particular molding parameters as required by Claim 1. Accordingly, as the combination of

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Rosato, Singh, and Cheung fail to teach or suggest all of the limitations required by Claim 1, dependent Claim 13 has not been rendered obvious. Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 13.

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Claim 14 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato and Singh, further in view of Adedeji et al. (U.S. Pub. 2002/0137840) (hereinafter "Adedeji"). Applicants respectfully traverse this rejection.

Adedeji generally discloses a thermoplastic composition including specified amounts of a poly(arylene ether), a homopolymer of an alkenyl aromatic monomer, a polyolefin, a hydrogenated block copolymer, and an unhydrogenated block copolymer, but the composition is substantially free of any rubber-modified poly(alkenyl aromatic) resin. Disks are not disclosed.

Claim 14 depends from Claim 9 which depends from Claim 1. As presented above, Claim 1 is not obvious over Rosato in view Singh because Rosato and Singh fail to suggest or motivate a skilled artisan to use the particular combination of the melt temperature, the mold temperature and the clamp tonnage as claimed in Claim 1. Adedeji also fails to suggest or motivate a skilled artisan to use this particular combination. Since Adedeji in combination with Rosato and Singh fail to suggest or motivate a skilled artisan to use the unique combination of the melt temperature, mold temperature, and clamp tonnage as claimed in Claim 1, Claim 1 and its dependent Claim 14 are not obvious over Rosato and Singh, further in view of Adedeji. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 14.

Claim 17 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato, in view of Karasz et al. (U.S. Patent 5,286,812) (hereinafter "Karasz"). Applicants respectfully traverse this rejection.

Karasz generally discloses thermoplastic compositions of an aromatic polyimide and an aromatic polyethersulfone. Blends of poly(2,6-dimethyl-1,4-phenylene oxide) is briefly disclosed as a miscible blend.

Claim 17 claims a method of molding a disk, comprising injection molding a polymeric material at a melt temperature of about 330 to about 370°C into mold having a mold temperature of about 90 to about 130°C and a clamp tonnage of about 12 to about 35 tons to form a disk, wherein the polymeric material comprises poly(2,6-dimethyl-1,4-phenylene oxide) and polystyrene. Claim 17 is not obvious over Rosato for the same reasons that Claim 1 is not

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obvious over Rosato, because Rosato fails to teach or suggest the particular combination of the melt temperature, the mold temperature and the clamp tonnage as claimed in Claim 17. Karasz also fails to teach or suggest the particular molding parameter combination. Karasz does not disclose any melt temperature, mold temperature, and clamp tonnage. Since Karasz in combination with Rosato fail to suggest or motivate a skilled artisan to use the unique combination of the melt temperature, mold temperature, and clamp tonnage as claimed in Claim 17, Claim 17 is not obvious over Rosato, in view of Karasz. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 17.

Claim 22 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato and Toshihiko, further in view of Ohkawa et al. (U.S. Patent 5,525,645) (hereinafter "Ohkawa"). Applicants respectfully traverse this rejection.

Ohkawa generally discloses a resin composition for optical molding which comprises (a) an actinic radical-curable and cationically polymerizable organic substance and (b) an actinic radiation-sensitive initiator for cationic polymerization. Ohkawa does not teach or suggest injection molding.

Claim 22 depends from Claim 18, which is not obvious over Rosato in view Toshihiko as previously discussed. Toshihiko fails to teach or suggest a multi-step method to ensure the production of disks having low radial tilt. For example, Toshihiko fails to teach or suggest creating an updated molding model based on molding parameter values. Toshihiko does not disclose molding parameters, such as melt temperature, mold temperature, etc. at all. Toshihiko is generally directed to an adhesive composition used in recording media.

In addition, Rosato also fails to teach or suggest the particular combination of steps required by independent Claim 18. Rosato only generally discloses molding parameters. It does not provide the requisite teaching or suggestion to injection mold according to a molding model comprising certain parameters, testing the resulting disks, updating the molding model, and repeating until the molding parameters of the resulting molding model results in the fabrication of disk assemblies exhibiting a radial tilt change value after aging of less than or equal to about 0.35 degree measured at a radius of 55 millimeters.

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Finally, Ohkawa does not even teach or suggest injection molding, let alone radial tilt of a disk. As each and every claim limitation of independent Claim 18 has not been taught or suggested by Rosato, Toshihiko or Ohkawa, either alone or combined, Claim 18 and its dependent Claim 22 have not been rendered obvious. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections against Claim 18 and its dependent Claims 19-21, 24, 31 and 32.

Claim 23 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato, Toshihiko, and Ohkawa, further in view of Dhar. Applicants respectfully traverse this rejection.

Claim 23 ultimately depends from Claim 18. As presented above, Claim 18 is not obvious over Rosato, Toshihiko, and Ohkawa because they fail to teach or suggest a multi-step method of molding disks. Dhar also fails to teach or suggest a multi-step method of molding disks. Therefore Claim 18 and its dependent Claim 23 are not obvious over Rosato, Toshihiko, and Ohkawa, further in view of Dhar. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 23.

Claims 25-27 stand rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato and Toshihiko, further in view of Singh. Applicants respectfully traverse this rejection.

Claims 25-27 depend from Claim 18. As presented above, Claim 18 is not obvious over Rosato and Toshihiko because they fail to teach or suggest a multi-step method of molding disks. Singh also fails to teach or suggest a multi-step method of molding disks. Therefore, Claim 18 and its dependent Claims 25-27 are not obvious over Rosato and Toshihiko, further in view of Singh. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 25-27.

Claim 28 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato, Toshihiko, and Singh, further in view of Fortuyn. Applicants respectfully traverse this rejection.

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Claim 28 ultimately depends from Claim 18. As presented above, Claim 18 is not obvious over Rosato, Toshihiko, and Singh because they fail to teach or suggest a multi-step method of molding disks. Fortuyn also fails to teach or suggest a multi-step method of molding disks. Therefore, Claim 18 and its dependent Claim 28 are not obvious over Rosato, Toshihiko, and Singh, further in view of Fortuyn. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 28.

Claim 29 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato, Toshihiko, and Singh, further in view of Allen. Applicants respectfully traverse this rejection.

Claim 29 ultimately depends from Claim 18. As presented above, Claim 18 is not obvious over Rosato, Toshihiko, and Singh because they fail to teach or suggest a multi-step method of molding disks. Allen also fails to teach or suggest a multi-step method of molding disks. Therefore Claim 18 and its dependent Claim 29 are not obvious over Rosato, Toshihiko, and Singh, further in view of Allen. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 29.

Claim 30 stands rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Rosato, Toshihiko, and Singh, further in view of Adedeji. Applicants respectfully traverse this rejection.

Claim 30 ultimately depends from Claim 18. As presented above, Claim 18 is not obvious over Rosato, Toshihiko, and Singh because they fail to teach or suggest a multi-step method of molding disks. Adedeji also fails to teach or suggest a multi-step method of molding disks. Therefore Claim 18 and its dependent Claim 30 are not obvious over Rosato, Toshihiko, and Singh, further in view of Adedeji. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejections regarding Claim 30.

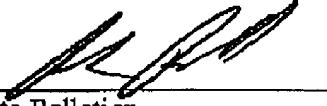
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It is believed that the foregoing remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are respectfully requested.

If there are any additional charges with respect to this Response or otherwise, please charge them to Deposit Account No. 50-1131.

Respectfully submitted,

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